

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94-049

UPDATED WASTE DISCHARGE REQUIREMENTS FOR:

WASTE MANAGEMENT OF ALAMEDA COUNTY
TRI-CITIES RECYCLING & DISPOSAL FACILITY
FREMONT, CALIFORNIA 94538

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

Waste Management of Alameda County, a wholly owned subsidiary of Waste Management Inc., the site legal owners and the landfill operators, (hereinafter referred to collectively as the discharger) by application dated February, 1992 has applied for revision of their current Waste Discharge Requirements (WDRs), for the continued operation of the Tri-Cities Recycling & Disposal Facility (TRDF), a Class III landfill on 115 developed acres in Fremont, Alameda County. The site is located at 7010 Auto Mall Parkway (formerly Durham Road) and is shown in Figure 1, which is incorporated herein and made a part of this Order.

PURPOSE OF UPDATE ORDER:

1. The primary objectives of this order is to update the groundwater and leachate monitoring program and to establish a set of construction specifications for Height Increase in Area 1 (Figure 2). In addition, this order consolidates the requirements of Subtitle D (Title 40 Part 258 of the Code of Federal Regulation) and the requirements of Article 5, Title 23, Division 3, Chapter 15 of the California Code of Regulations into one order.

SITE HISTORY

2. The TCRDF is located on a 378-acre parcel at the westerly terminus of Auto Mall Parkway in the City of Fremont, California. Until December 1, 1986, the landfill was operated by Oakland Scavenger Company (OSC). At that time, Waste Management of North America, Inc. (WMNA) acquired OSC. Currently, OSC is known as Waste Management of Alameda County and WMNA is known as Waste Management Inc.
3. The existing landfill began operations in 1967 in accordance with accepted practices of the time. The existing landfill was initially developed by removal of the soil down to the water table (approximately 1 to 3 feet). Refuse was then placed and compacted in this excavation which constitutes the base of the

landfill. Since several feet of refuse at the existing landfill is below the elevation of shallow groundwater, the Site does not meet the siting criteria for a Class III landfill as specified in Section 2530 (C) of Chapter 15 which requires that waste will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater.

Board found it infeasible for the siting criteria specified in Section 2530(c) of Chapter 15, regarding 5 foot separation of wastes and the highest anticipated elevation of groundwater, to be met for Area 1, vertical expansion, of the existing landfill area. The discharger submitted a specific engineered alternative pursuant to Section 2510(b) of Chapter 15, which was consistent with the performance goals of Article 3 , Chapter 15, and which affords equivalent water quality protection.

4. On February 20, 1979 Waste Discharge Requirements (WDR) Order No. 79-21 was adopted for the site. On January 19, 1984 Order No. 84-7 revised Order No. 79-21.
5. On March 18, 1990 the Board adopted WDR Order No. 90-051.
6. On September 15, 1993 the Board adopted Order No. 93-113 as a general permit implementing the requirements of Subtitle D (Title 40, Code of Federal Regulations [CFR], Parts 257 and 258, Federal MSW regulations).

SITE DESCRIPTION

7. Tri-Cities Recycling & Disposal Facility (TRCDF) is being developed in three phases; Areas 1, 2 and 3. The permitted conceptual plan for the Site reflects a maximum elevation of 103 feet in all three areas. Currently, fill activities are limited to Area 1; the Site will reach capacity in this area in first quarter of 1995. TCRDF is requesting a Vertical Height Increase in Area 1 to allow continued operation of the Site while pursuing design approval for Area 2.
8. Land within 1000 feet of the site to the south and west is part of the San Francisco Bay National Refuge and is used for salt evaporation ponds. Land to the north and east is undeveloped area.
9. The United States Army Corp of Engineers has determined that the proposed 117 acre landfill expansion does not include wetland areas. However, the Army Corp of Engineers has identified wetland habitat on a portion of the site which is

not proposed for development.

GEOLOGIC SETTING OF THE SITE

10. The waste management unit is located on the San Francisco Bay Plain near the contact of the Niles Cone alluvial fan deposits and the estuarine deposits of San Francisco Bay. The geologic units underlying the site are either alluvial or estuarine in nature and are essentially flat lying or dipping slightly westward.
11. United States Geological Survey (U.S.G.S.) reports (Halley, et al 1972) indicate that the site is underlain by Holocene-aged Interfluvial Basin Deposits along the northeastern portion of the site, Pleistocene-aged Older Bay Mud in the Central portion of the site and Holocene-aged Recent Mud of San Francisco Bay in the majority of the site. The interfluvial Basin Deposits consist of plastic, poorly sorted, organic rich clay and silty clay. The Older Bay Mud (OBM) consist of dark, plastic, semi-consolidated organic rich clay and silty clay. As shown on the Site Geologic Map (Figure 2), surficial deposits at the site are, in general, naturally occurring Younger Bay Mud (YBM).
12. Subsurface geologic investigations indicate that the three different units, the surficial Young Bay Mud, the Old Bay Mud and the Newark Aquifer comprise the near surface soil profile of the landfill as described below:
 - The Young Bay Mud unit can be characterized as being firm, darkly-colored clays with lenses and interbeds of other fine grained soils. The unit's dark colors, gray to gray-brown to black, are consistent with its high organic content; the unit's texture varies from sandy to silty clay; and its consistency ranges from soft to stiff. Depths of the surficial YBM ranges from 7 to 25 feet below MSL. This uppermost clay unit is interlayered with lenses of clayey silt, sandy silt, clayey sand, and silty fine sand from 1 to 6 feet in thickness. The permeability of the sands and silts within the YBM ranges from 7×10^{-4} to 3×10^{-3} cm/sec.
 - The Old Bay Mud underlying the surficial unit. The OBM unit is a stiff, blue-gray to blue-green, silty clay borderline to clayey silt. The OBM extends down 13 to 70 feet below Mean Sea Level (MSL). The thickness of the OBM unit is generally greater than 10 feet, except in the northeasterly part of the site where it tapers down to about 4 feet.
13. The site is located in a structural depression formed by

movement along the active Hayward and San Andres faults, and tectonic downwarping of the intervening area. the Hayward Fault is located approximately 3.8 miles east of the site, the San Andres Fault is located 21 miles west of the site. The Silver Creek Fault is located approximately 1.5 miles west of the site according to a geophysical gravity survey conducted by the California Department of Water Resources. This fault offsets the Plio-Pleistocene-aged Santa Clara Formation south of the site, but is not known to have offset any Holocene or recent sediments.

HYDROGEOLOGIC SETTING OF THE SITE

14. The site is located at or near the contact of Niles Groundwater Subarea, which is part of the extensive Fremont Groundwater Area. The extensive nature of the aquifers in the Nile Subarea has made it possible to delineate specific water bearing formations beneath the site. The major water bearing formations underlying the site are briefly described as follows:

- A perched water table - This type of water is common throughout the site, usually occurring at depths less than 20 feet below the natural ground surface. The perched zone occurs in the low permeability YBM and is characterized by very poor water quality with high chloride, specific conductance and total dissolved solids (TDS). The groundwater flow in this unit, YBM, occurs under water table conditions within the more permeable silty sand, sandy silt, and silt deposits. In general shallow groundwater flow directions are controlled by recharge from topographically higher areas to the east. Locally, recharge and discharge influences from surface water bodies are superimposed upon this system.
- The Newark Aquifer - A shallow saline aquifer system, occurs at elevations from 11 to 90 feet below ground level. Water quality within the aquifer is very poor, showing evidence of saline water intrusion. This aquifer beneath the site is of moderate permeability (5×10^{-4}) and consists principally of sandy clay within thin interbeds of sand and gravel.
- The Centerville aquifer - The Centerville Aquifer underlies the site at a depth of approximately 180 feet beneath the surface. This water bearing zone, Centerville aquifer, is separated from the Newark Aquifer by a thick clay aquiclude which effectively separates the

Centerville aquifer from saline water contained in the Newark Aquifer. The potable water bearing formation, the Centerville Aquifer, is composed of angular shell fragments and rounded pebble-size gravel with scattered thin calcareous cemented layers. The yield of this zone is in the order of 50 to 100 gallons per minute (gpm).

15. Historically, the shallow groundwater was used as domestic supply water in an area known as Drwabridge, approximately 2 miles south of the site. Due to salt water intrusion, the western portion of the Newark Aquifer (which includes the Newark Aquifer underlying the site) is not potable. The Alameda County Water District has an existing Aquifer Reclamation Program and is developing a salt water intrusion barrier project, in order to reclaim and protect the quality of groundwater to the north and east of the landfill. Groundwater extraction wells along the Southern Pacific Railroad track (NNW of the landfill site) will be used to create an hydraulic barrier by removing saline water and establishing a freshwater flow in a southwesterly direction. Once the design plans for the salinity barrier project are finalized, the discharger is required to determine what influences the aforementioned plan will have on the subsurface hydrology at the site and re-evaluate the adequacy of the existing self monitoring program.
16. The beneficial uses of Coyote Creek, Mud slough, and South San Francisco Bay are as follows:
 - a. Wildlife habitat
 - b. Brackish and salt water marshes
 - c. Water contact recreation
 - d. Non-water contact water recreation
 - e. Commercial and sport fishing
 - f. Preservation of rare and endangered species
 - g. Estuarine habitat
 - h. Fish migration and spawning
 - i. Navigation
17. The present and potential beneficial uses of the Centerville Aquifer (below elevation-180 feet MSL) are as follows:
 - a. Domestic and municipal water supply
 - b. Industrial process supply
 - c. Industrial service supply
 - d. Agricultural supply
18. The existing and potential beneficial uses of the Newark Aquifer north and east of the site are:
 - a. Municipal Water Supply
 - b. Industrial Process Water

19. The existing and potential beneficial uses of the Newark Aquifer at the site location is:
 - a. Industrial Service Supply

WASTES AND THEIR CLASSIFICATION

20. Waste received at TCRDF consists of non hazardous solid wastes and inert wastes as defined by the California Code of Regulations (CCR), Title 23, Chapter 15, Article 2, Sections 2523 and 2524 (23 CCR 2523 and 2524). These wastes are generated from residential, commercial, industrial and agricultural sources.
21. Waste received at TCRDF from the above sources include municipal solid waste (residential & commercial), industrial waste and demolition waste. The approximate percentages (concentration) of each type of waste are listed in February 1993 Report of Waste Discharge of the facility.
22. TCRDF no longer accepts hazardous wastes. The historical acceptance of hazardous waste at TCRDF is described below:
 - a. Hazardous Wastes:
 - o Asbestos - Prior to 1990, asbestos was disposed of at TCRDF in accordance with Section 25143.7 of the Health and Safety Code and OSC Procedure 55-302. The amount of Asbestos which has been previously disposed is approximately 500 Cubic Yard (CY) per year. Acceptance of this material ceased 1990.
 - o Infectious Bio - Medical Wastes - Approximately 20 tons of waste per year were disposed of at the site in accordance with state approved OSC Procedure 55-301. This practice was discontinued in December, 1990 in accordance with state regulations.
 - o Liquid Waste - Liquid wastes were accepted at TCRDF and were used for on-site dust control purposed. The site ceased to accept grease trap pumping in 1988.

b. Special Wastes:

TCRDF accepts various types of wastes designated as "special wastes". Special wastes are wastes requiring special handling at the site prior to disposal or waste which require analysis and testing prior to acceptance. This type of special wastes make up less than 1% of the total waste composition.

DESIGN & OPERATION PLAN

23. The conceptual final grading and drainage layout for Area 1 (vertical expansion) consisting of 3 Modules, Module 1, 2 and 3. The three Vertical Modules will be constructed to have an approximate refuse capacity of 1.04 Million Cubic Yard (MCY), 1.7 MCY and 1.5 MCY respectively. The sequence of filling is approximate and will be affected by operational requirements.
24. Fill Module 1 will be constructed in the northeast portion of the site and will be utilized to shelter continuing fill operations from prevailing winds. This Module will also provide a facade to create an aesthetic view for surrounding neighbors.
25. Fill Module 2 will be constructed in the western portion of the site adjacent to Module 1. The filling process will begin at the northwest and progress to the southeast. The layout of Module 1 and Module 2 will provide utilization of existing access roads and maximize working face areas while allowing sufficient room for winter disposal areas.
26. Module 3 will be constructed in the eastern portion of the site and will complete the final stage of the proposed vertical expansion. An access road will be constructed at the southeast section of Fill Module 3 in order to maximize the efficiency of fill operation.
27. Fill operation and placement of refuse for the horizontal expansion will be filled in a similar sequential manner as is planned for Area 1. The overall final grade configuration creates an elevated knoll, with top surface grades at a minimum of 5 percent and side slopes of 3:1 (Horizontal: Vertical), with benches. The top surface is graded to provide runoff to designated downdrain areas. From the downdrain inlets the water is channeled through 18" corrugated metal pipe (CMP) down the 3:1 (H:V) slopes. Benches are constructed with ditches to direct runoff to downdrain inlets. The runoff collected in the downdrain is channeled to the base of the

landfill, where it is dissipated and dispersed to the perimeter ditches and flatland surrounding the site.=_

28. The Leachate Collection & Removal System (LCRS) for Area 1 consists of approximately 7000 linear feet of perimeter drainage trench sloped into 12 collection. Pneumatic pumps extract and convey the collected leachate from the sumps through a perimeter force main to its discharge point into the on-site sanitary sewer. The extraction system is currently permitted to discharge 54 gpm. The LCRS has been designed to create an inward gradient around the perimeter of the landfill to isolate the site from the surrounding water table and to prevent leachate migration.

MONITORING PROGRAM

29. The discharger shall analyze for the parameters as presented in Table 2 of the Discharge Monitoring Program for the Tri-Cities Landfill. The discharger must also be in compliance with the requirements of Sections Nos. 9, 10, 11, 12 and 13 of Order No. 93-113.
30. The monitoring network of the facility is consisted of 10 leachate, 22 groundwater wells and 24 surface water monitoring points as shown on monitoring point location map.
31. The discharger submitted a proposed monitoring and reporting program July 1, 1992 in accordance with the requirements of Article 5, Title 23, CCR.
32. Due to the proximity of the base of refuse to the perched water table, unsaturated zone monitoring as identified in Section 2550.7(d)5, Title 23, CCR, is not required for Area 1.

SLOPE STABILITY

33. Static Slope Stability: Results of slope stability analysis indicate a minimum static factor of safety of 1.5 immediately after refuse placement. The investigators conclude that the planned slopes have an adequate factor of safety against failure under gravity loads. The factor of safety will increase with time as the bay mud continues to consolidate, and the bay mud gains strength after filling is completed.
34. Seismic Slope Stability: Analyses results indicate that the medium dense/stiff silty sands/sandy silts of the transition zone are marginally liquefiable, and would be subjected to a

buildup of excess pore water pressure during the design earthquake.

35. It has also been indicate that, in the southern half and northwestern parts of the landfill, deformations could occur ether within the transition zone (on the order of 3 feet) or within the bay mud along Elevation -20 feet (on the order of 2 feet) during the design earthquake. In addition, liquefaction of the transition zone material during the design earthquake may result in up to 6 inches of settlement. In spite of the predicted deformation and settlement, consultant to the OSC, Harding Lawson Associates states that " We judge that there will be a very low risk of foundation failure, and that the landfill will perform acceptably during the Maximum Probable Earthquake MPE).

CALIFORNIA ENVIRONMENTAL QUALITY ACT

36. The City of Fremont has approved a final Environmental Impact Report in accordance with the California Environmental Quality Act (Public Resource Code Section 2100 et.seq). The project as approved by the City of Fremont, could cause a significant effect on the environment in that the presence of the landfill and landfill activity may degrade water quality unless appropriate mitigation measures are taken. The Prohibitions, Specifications, and Provisions of this Order are intended to mitigate or avoid any adverse or potential adverse impact.
37. The preceding impacts are mitigated or avoided by designing measures to control erosion and assure containment of waste and leachate through the use of composite liners and leachate collection and removal systems.
38. The Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) amended on October 21, 1992. This Order implements the water quality objectives stated in that plan and its subsequent amendments.
39. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations.
40. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED pursuant to authority in Section 13263 of the California Water Code, the discharger, its agents, successors and assigns may discharge waste at the Tri-Cities Recycling & Disposal Facility providing compliance is maintained with regulations adopted under Division 7 of the California Water Code and with the following:

A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050(1) and (m) of the California Water Code.
2. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.
3. Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.
4. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or of the United States.
5. Leachate shall not be introduced to non-composite lined units.
6. Hazardous and designated wastes as defined in Sections 2521 and 2522 of Chapter 15, shall not be deposited or stored at this site.
7. High moisture content wastes (including restaurant grease) containing less than 50% solids, **shall not** be deposited or stored at this site except as provided in an approved sludge management plan. Wastes containing at least 50% solids and defined by Section 2523 of Chapter 15 as Non-hazardous Solid Waste, may be deposited at this site.
8. The discharge of wastes which have the potential to reduce or impair the integrity of the containment structures or which, if commingled with other wastes in the unit, which could produce chemical reactions that create heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
 - a. require a higher level of containment than provided by the unit,
 - b. are "restricted hazardous wastes", or

- c. impair the integrity of the containment structures.
9. Construction of the containment features of all future waste management units must be in compliance with this Order, Chapter 15 and Subtitle D. Wastes shall not be placed in any area of a new unit until the Executive Officer has received and approved report(s) certified by a California registered civil engineer or certified engineering geologist in accordance with Provision C.2 of this Order.
 10. Hazardous and designated wastes as defined in Section 2521 and 2522 of Chapter 15, and high moisture content wastes (including sewage sludge, septic tank waste, cannery waste, restaurant grease, and other wastes containing less than 50 % solids) shall not be deposited at the site.
 11. The discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
 - a. Surface Waters
 1. Floating, suspended, or deposited macroscopic particulate matter or foam.
 2. Bottom deposits or aquatic growth.
 3. Adversely alter temperature, turbidity, or apparent color beyond natural background levels.
 4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
 5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.
 - b. Groundwater
 1. The groundwater shall not be degraded as a result of the waste disposal operation.
 2. Waste shall not be placed in area known as the Corporation Yard until the discharger has received a case closure letter from the Board's Executive Officer indicating that remediation of the petroleum hydrocarbon contamination in this

area has been satisfactorily completed.

B. SPECIFICATIONS

1. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
2. Water used during disposal operations shall be limited to dust control, fire suppression and earth fill moisture conditioning. Leachate is not allowed to be used for this purpose.
3. The site shall be protected from any washout or erosion of wastes from inundation which could occur as a result of a 100-year 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years. The discharger must also comply with §3 of General Amendment of Waste Discharge Requirements Order No. 93-113.
4. Hazardous and designated wastes shall not be disposed of at this facility. Non-hazardous, inert and medical, Infectious, wastes may be disposed of at the facility provided that all Federal regulations, Subtitle D, and provisions of the California Integrated Waste Management Board, California Department of Toxic Substance Control, Local Health Agencies and Local Land Use Permit requirements are complied with.
5. The facility must maintain it's comprehensive leachate collection and recovery system to ensure leachate containment.
6. The facility must have a comprehensive surface runoff control system to prevent erosion.
7. All conveyance control facilities and hydraulic structures shall be constructed to ensure normal flow of leachate. All hydraulic structures shall be constructed according to the design and construction specifications as well as in accordance with Section 2545 of Chapter 15, Subtitle D prior to the placement of any refuse in the specified fill area.
8. The discharger shall assure that the foundation of the site, the refuse fill, and the structures which control leachate, surface drainage, erosion and gas for this site are constructed and maintained to withstand conditions generated during the maximum probable earthquake.
9. As portions of the Class III landfill are closed, the exterior

surfaces shall be graded to a minimum slope of 3 percent in order to promote lateral runoff of precipitation. The final cover must be constructed to meet the requirements of Chapter 15 and Subtitle D.

10. All future fill Area of the landfill shall be designed and constructed in conformance with the requirements of Subtitle D, Chapter 15 and this Order. The final design plans shall be submitted to the Executive Officer for review and approval and shall include, but not be limited to, the engineered design plans for the fill cell, the construction specifications, a construction quality assurance (QA/QC) plan, and a revised discharge monitoring program. The final construction report shall include, but not be limited to, construction record drawings (as-built drawings) for the waste management unit, a QA/QC report with a written summary of the QA/QC program and all test results and analyses, and a certification.
11. The discharger shall operate the waste management facility so as to prevent a statistically significant increase in water quality parameters at the point of compliance as provided in Section 2550.5, Article 5 of Chapter 15 and Water Quality Protection Standards (WQPS). The discharger has established a statistical methodology to evaluate water quality monitoring data as reported in the proposed monitoring & reporting program, submitted July 1992. The discharger shall monitor a minimum of four quarters for the constituents of concern listed in Table 2. Based upon the results of the monitoring, the discharger shall propose a revised list of COC's and monitoring parameters in accordance with the requirements of this Order, Article 5 of Chapter 15 and Section 8 of Order No. 93-113 within fifteen months of issuance of this order.
12. The discharger shall establish constituent background values for the site within fifteen months of the issuance of this Order.
13. In the event of a release of a constituent of concern beyond the Point of Compliance, the site will begin a Compliance Period pursuant to Section 2550.6(a), Article 5 of Chapter 15. During the Compliance Period, the discharger shall perform an Evaluation Monitoring Program and a Corrective Action Program.
14. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.
15. Interim cover shall be maintained over all areas where waste will not be placed for 180 days, at all times, except for the active face area of the disposal as approved by the California

Integrated Waste Management Board.

16. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone in accordance with applicable regulatory requirements.
17. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and post-closure maintenance period.
18. The discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption as provided for by the performance standards adopted by the California Integrated Waste Management Board.
19. The discharger shall provide a minimum of two permanent surveyed monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.
20. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure which threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.
21. The discharger shall notify the Regional Board at least 180 days prior to beginning any intermediate or final closure activities. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.
22. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report which documents that the area has been closed according to the requirements of this Order, Subtitle D and Chapter 15. The discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all

applicable regulations.

23. The discharger shall comply with all applicable provisions of Chapter 15 and Subtitle D of the Resource Conservation and Recovery Act (Title 40 Part 258, Code of Federal Regulations) that are not specifically referred to in this Order.
24. The discharger must install a number of inclinometers at appropriate locations to monitor landfill's deflection.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order or as provided below.
2. The discharger must construct all lateral expansions to the existing landfill in accordance with the siting requirements specified in Section 2530(c) of Subchapter 15, regarding 5 foot of separation of wastes and the highest anticipated elevation of groundwater.
2. Prior to commencement of filling of a specific area of the site the discharger shall submit a report indicating compliance with all Prohibitions, Specifications, and Provisions of this Order. This shall include as-built construction diagrams. Filling of the area described in the report shall not commence until Regional Board staff approves this report based on its demonstration of compliance with this Order.

REPORT DUE DATE: 45 DAYS PRIOR TO FILL COMMENCEMENT

3. The discharger shall submit a detailed **Post Earthquake Inspection and Corrective Action Plan** acceptable to the Executive Officer to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater at or within 30 miles of the landfill. The report shall describe the containment features, and ground water monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: WITHIN THREE MONTHS OF ADOPTION OF THIS ORDER

4. The discharger shall submit to this Board and to the California Integrated Waste Management Board, evidence of an **Irrevocable Closure Fund** or provide other means to ensure closure and post-closure maintenance of the waste management unit, pursuant to Section 2580(f) of Chapter 15. The Closure Fund must provide sufficient funds to properly close the landfill and for the post-closure monitoring, leachate management, and maintenance of the site. For the purposes of planning the amount of the fund, the discharger shall assume a post-closure period of at least 30 years. However, the post-closure maintenance period shall extend as long as the wastes pose a threat to water quality.

REPORT DUE DATE: WITHIN THREE MONTHS OF ADOPTION OF THIS ORDER

5. The discharger shall submit **Final Construction Details** acceptable to the Executive Officer pursuant to the specifications of this Order. The proposal should provide work plans for development of the various components of the landfill, including detailed specifications for leachate collection and removal systems and should include Quality Assurance & Quality Control Procedures, (QA/QC), for all aspects of construction and installation. The work plans for construction of the liners and the leachate collection and recovery system should include detailed specifications regarding the sequence of construction of the various segments of the project, and provide sufficient detail about how the various cells and modules of the landfill areas will interface structurally. The Final Construction Details must be determined to be consistent with this Order by the Executive Officer prior to acceptance of waste.
6. The Closure and Post Closure Plan for the facility shall be in compliance with the requirements of Article 8 of chapter 15, and with the provision found in Section 14 of General permit No. 93-113.
7. The discharger shall submit an updated geologic map as described in Specification B.16 as new waste management units are constructed. Prior to the placement of refuse in the unit, a detailed written description of the mapping procedure must be submitted and approved by the Executive Officer. The discharger shall evaluate each shear zones and other macro or micro geologic deformations.

REPORT DUE DATE: 30 DAYS AFTER THE SUBGRADE PREPARATION IS COMPLETED

8. The discharger shall submit a **Contingency Plan** to be instituted in the event of a leak or spill from the leachate facilities. The discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board, the Local Enforcement Agency (LEA), and the California Department of Toxic Substance Control. The discharger shall initiate its corrective action plan to stop and contain the migration of pollutants from the site.

REPORT DUE DATE: WITHIN THREE MONTHS OF ADOPTION OF THIS ORDER

9. The discharger shall file with the Regional Board Discharge Monitoring Reports prepared under the supervision of a registered civil engineer or registered geologist performed according to any **Discharge Monitoring Program** issued by the Executive Officer.
10. The discharger shall develop the monitoring parameters in compliance with the requirements of Sections 9, 10, 11, 12 and 13 of General Amendment of Waste Discharge Requirements Order No. 93-113 except otherwise specified in this order.
11. The reports pursuant to these Provisions shall be prepared under the supervision of a registered engineer or certified engineering geologist.
12. The discharger shall remove and relocate any wastes which are discharged after the date of adoption of this Order in violation of these requirements.
13. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of the waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal areas or the ownership of the site.
14. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

NOTIFICATION: IMMEDIATELY

REPORT DUE DATE: WITHIN 7 DAYS AFTER THE INCIDENT

15. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
16. This Board considers the property owner and site operator to

have continuing responsibility for correcting any problems which may arise in the future as result of this waste discharge or related operations.

17. The discharger shall permit the Board or its authorized representative, upon presentation of credentials:
 - a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order or by any other California State Agency.
 - d. Sampling of any discharge or ground water governed by this Order.
18. This Order updates Order No. 90-051 and incorporates Order No. 93-113.
19. The facility is permitted to use sludge (Biosolids) as an alternative daily cover on a demonstration basis for a period of one year. During this period the discharger is required to monitor the leachate and groundwater for the Constituents of Concern (COC). The discharger must submit a technical document addressing the performances and operation of the project and their impact on surface and groundwater quality during the one year demonstration project. The continued use of the project will depend on the water quality compliance issues. Approval by the Executive Officer is required for continued use of sludge beyond the one year demonstration period.
20. Runoff from those portions of the landfill where sludge is exposed to precipitation must be collected and tested for COC and for a fish toxicity (Bio-Assay) using rainbow trout. Prior to discharge, the results of all tests and analysis must be in compliance with the shallow water standard of the San Francisco Basin Plan. Alternatively, that portion of the landfill having exposed biosolids must be covered prior to a storm event.
21. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the

discharge of wastes without appropriate permits from other agencies or organizations.

22. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.
23. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications and Provisions of this Order, shall also be provided to Alameda County LEA.

I, Steven R. Ritchie Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 20, 1994.



Steven R. Ritchie
Executive Officer

Attachments:

A. Figures:

1. Site Location Map
2. Sit Plan

B. Discharge Monitoring Program

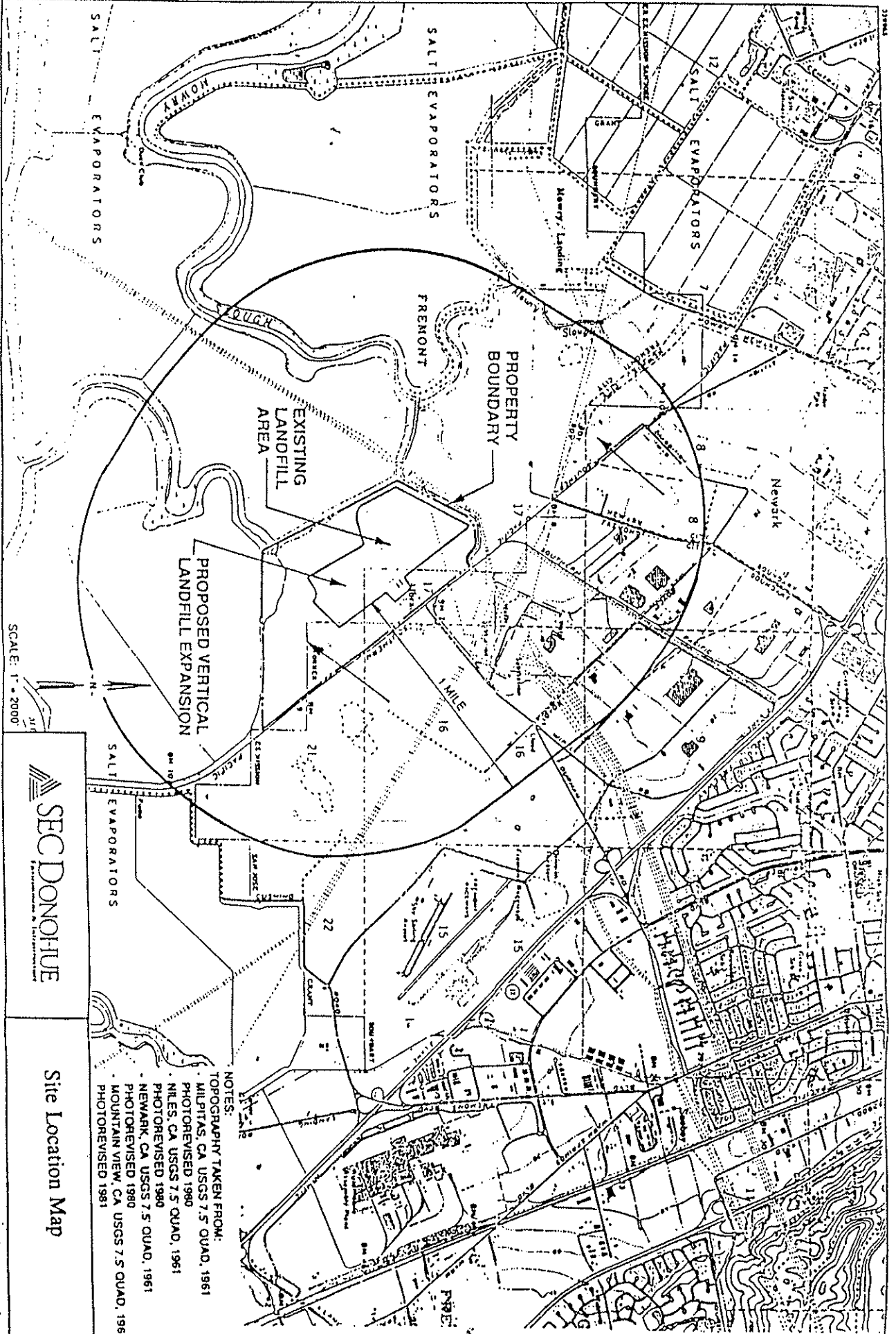
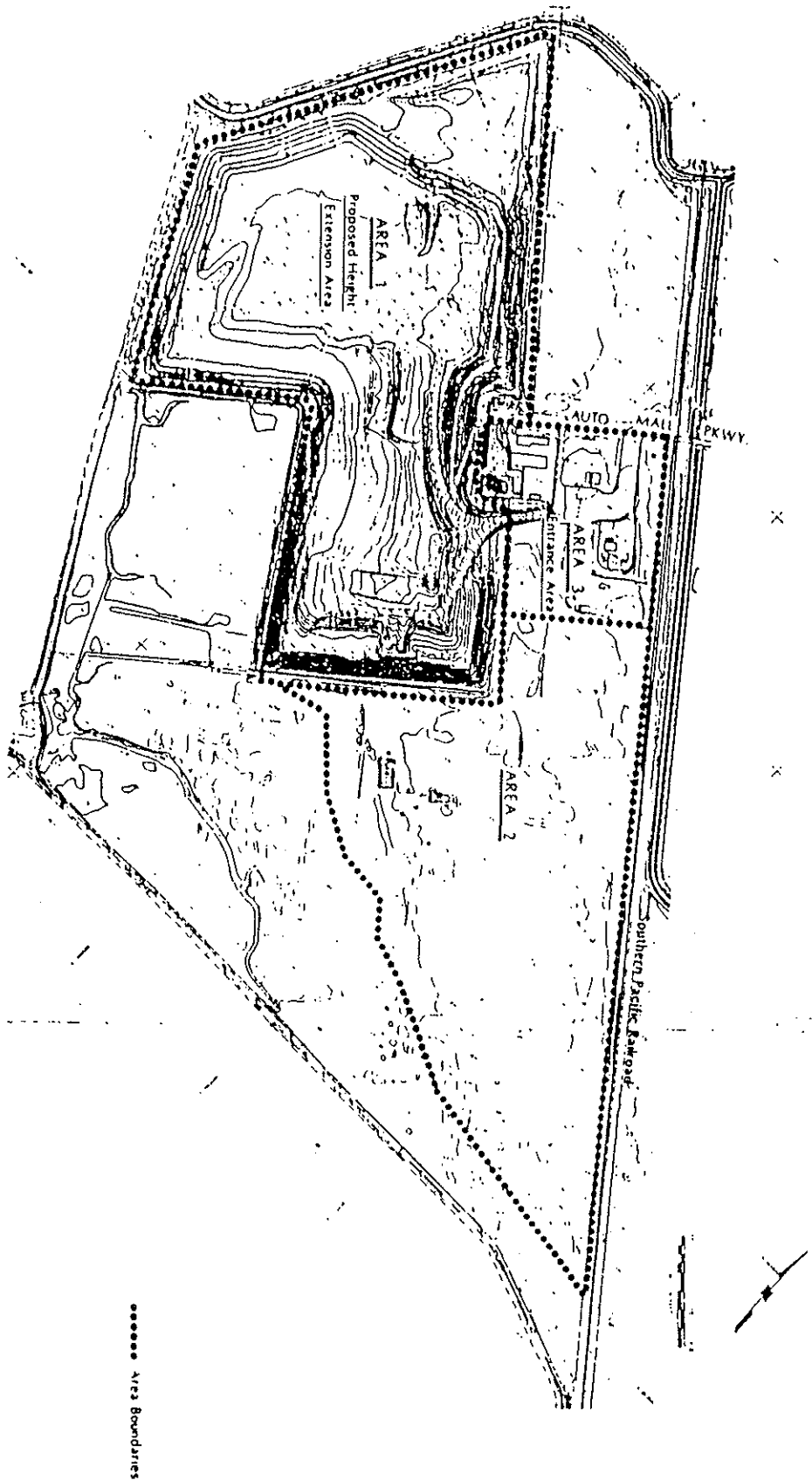


FIGURE 1



SITE PLAN

FIGURE 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

WASTE MANAGEMENT OF ALAMEDA COUNTY

TRI-CITIES LANDFILL

FREMONT, ALAMEDA COUNTY

ORDER NO. 94-049

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16. This Discharge Monitoring Program is issued in accordance with Provision C.10 of Regional Board Order No. 94-049.

The principal purposes of a discharge monitoring program are:

- (1) to document compliance with waste discharge requirements and prohibitions established by the Board,
- (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge,
- (3) to develop or assist in the development of standards of performance, and toxicity standards,
- (4) to assist the discharger in complying with the requirements of Article 5, Chapter 15 as revised July 1, 1991.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and he/she or their authorized representative shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwater which pass over, through, or under waste materials or contaminated soils. In this case, the groundwater beneath and adjacent to the landfill areas and the

TRI-CITIES MONITORING PROGRAM

surface runoff from the site are considered receiving waters.

3. Standard observations refer to:

a. Receiving Waters

- 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
- 2) Discoloration and turbidity: description of color, source, and size of affected area.
- 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 4) Evidence of beneficial use: presence of water associated wildlife.
- 5) Flow rate.
- 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit

- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on a map.)
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit

- 1) Evidence of ponded water at any point on the waste management facility.
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source
- 3) Evidence of erosion and/or daylighted refuse.
- 4) Standard Analysis (SA) and measurements are listed on Table 2 (attached).

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 2550.7(b)
2. Surface water per Section 2550.7(c) and per the general requirements specified in Section 2550.7(e) of Article 5, Chapter 15 and
3. Vadose zone per Section 2550.7(d). This item is not feasible and applicable for Area 1.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time of analyses, and name of the personal performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used where applicable; or reference to standard EPA methods.
5. Calculation of results.
6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 15th day of the month following the report period. In addition, an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period, this shall be stated in the letter of

TRI-CITIES MONITORING PROGRAM

transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge, the report is true, complete, and correct.

- b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:
 - 1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations. A statistical evaluation of the water quality monitoring data for all groundwater compliance points (As required under Part B. Section 1(c)).
 - 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field PH, temperature, and conductivity during purging, calibration of the field equipment, results of the PH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
 - 3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualification of the person actually taking the samples, and any other observations.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports

of such work submitted to the Board.

- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approval by the Executive Officer prior to use.
 - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; and explanation for any recovery rate that is outside of the normal range specified by the EPA for that method; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name of the person(s) performing the analyses.
- e. An evaluation of the effectiveness of the leachate monitoring or control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.
 - f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
 - g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.
2. CONTINGENCY REPORTING
- a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:
 - 1) a map showing the location(s) of discharge;
 - 2) approximate flow rate;
 - 3) nature of effects; i.e., all pertinent observations and analyses; and
 - 4) corrective measures underway or proposed.

TRI-CITIES MONITORING PROGRAM

- b. A report shall be made in writing to the Board within seven days of determining that a statistically significant increase occurred at a point of compliance (between a down gradient sample and a WQPS). Notification shall indicate what WQPS(s) has/have been exceeded. The discharger shall immediately resample at the compliance point where this difference has been found and reanalyze.
- c. If resampling and analysis confirms the earlier finding of a statistically significant increase between monitoring results and WQPS(s), the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 2550.8(k)(5) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 2550.9 of Chapter 15.
- d. Within 180 days of determining statistically significant evidence of a release, submit to the regional board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 of each year, the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a 5-1/4" or 3-1/2" computer data disk, MS-DOS ASCII format, tabulating the year's data.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- c. A map showing the area, if any, in which filling has been completed during the previous calendar year.
- d. A written summary of the groundwater analyses

indicating any change in the quality of the groundwater

- e. An evaluation of the effectiveness of the leachate monitoring/control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

TRI-CITIES MONITORING PROGRAM

PART B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. WASTE MONITORING - Report Quarterly

1. Record the total volume and weight of refuse in cubic yards and tons disposed of at the site during each month. Show locations and dimensions on a sketch or map.
2. Record a description of waste stream to include a detail of waste received by City of origin.
3. Record location and aerial extent of disposal of each waste type.

B. ON-SITE OBSERVATIONS - Report Quarterly

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-'n'	Located on the waste disposal area as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Weekly
P-1 thru P-'n' (perimeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Weekly

A map showing visual and perimeter compliance points (V and P stations) shall be submitted by the discharger in the quarterly monitoring report.

C. GROUNDWATER, LEACHATE AND SURFACE WATER MONITORING

Report Quarterly

Groundwater, Leachate, seepage and surface water shall be monitored as outlined below and on Table 1 and Table 2 and shown on Figure 1 (Attached). In addition, surface water shall be monitored in accordance with the National Pollutant Discharge Elimination System General Permit NO. CAS000001.

Seepage Monitoring for standard observations and the surface water monitoring parameters identified in Table 2 shall be conducted daily until remedial action is taken and seepage ceases.

The groundwater parameters listed in Table 2 are to be monitored quarterly for a period of not less than one year. Subsequent to this one year monitoring period, the discharger shall propose for acceptance by the Board a selected subset of the Table 2 parameters as constituents of concern (COC) per Section 2550.3 of Chapter 15, and a selected subset of the parameters in the COC list as detection monitoring parameters per Section 2550.8 (e) of Chapter 15. The selection of the COC's will be based upon site specific leachate data. The Criteria for selection of the detection monitoring parameters are detectability, persistence, existence in the site's leachate, mobility, and contrast to surrounding groundwater.

The selected Constituents of Concern shall be monitored once every five years at all groundwater wells identified in Table 1 in accordance with Section 13 of Board Order 93-113. Wells MW-1C, MW-2C, MW-3A, MW-3C, MW-4A, MW-4C, MW-5A, MW-5C, MW-6A, MW-6C, MW-9A, MW-10A and MW-11A are to be monitored for informational purposes only once in the third quarter of every year. These wells are not part of the detection monitoring program for Area 1.

TABLE 1

Monitoring Points for Each Monitored Medium

MONITORING MEDIA	Compliance Point
Surface Water	R-001 (upstream of seepage) R-002 (downstream of seepage)
Groundwater	MW-1A, MW-3A, MW-4A, MW-5A, MW-6A, MW-7A, MW-8A, MW-9A, MW-10A, MW-11A, MW-12A, MW- 13A, MW-14A, MW-15A, MW-16A, G-4, MW1C, MW-2C, MW-3C, MW- 4C, MW-5C, MW-6C.
Leachate	LW-1, LW-2, LW-3, LW-4, LW-5
Seepage	S-1 thru S- 'n'


D. FACILITIES MONITORING

The discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report quarterly. The facilities to be monitored shall include, but not be limited to:

- a. Leachate collection and removal systems
- b. Surface water impoundment
- c. Vadose zone (Not applicable for Area 1, the existing landfill) and subdrain collection systems
- d. Perimeter diversion channels
- e. Leachate management facilities and secondary containment.

I, Steven Ritchie Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 94-049
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.



Steven R. Ritchie
Executive Officer

Date Ordered: April 20, 1994

Attachments:

Figure 1 - Monitoring Points Location map
Table 2 - Discharge Monitoring Plan

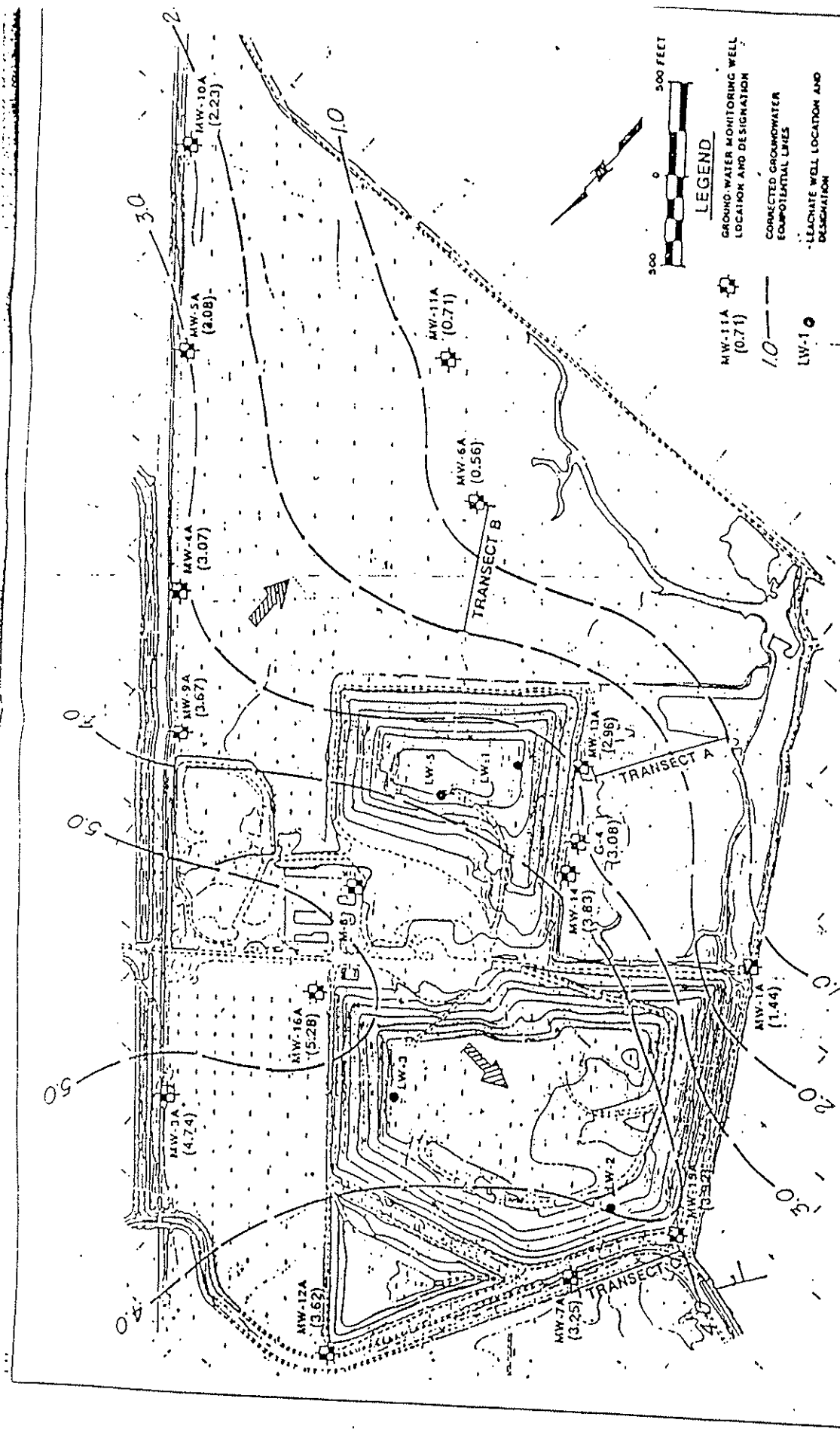


FIGURE 1

Table 2 - Discharge Monitoring Plan, List of Analytical Parameters

Parameters	Method (USEPA)	Frequency	Reference
leachate Level Measurements	Field	Quarterly	1
Water level Measurements	Field	Quarterly	1 (a,b)
Temperature Measurements	Field	Quarterly	1 (a)
Electrical Conductivity	Field	Quarterly	3 (a)
PH	Field	Quarterly	3 (a)
Turbidity	Field	Quarterly	1 (a,c)
Alkalinity, bicarbonate	310.1	Quarterly	2 (a)
Alkalinity, hydroxide	310.1	Quarterly	2 (a)
Chemical Oxygen Demand	410.2	Quarterly	2 (a)
Chloride	353.2	Quarterly	3 (a)
Nitrate Nitrogen	353.1	Quarterly	3 (c)
Total Kjeldahl Nitrogen	351.2	Quarterly	2 (a)
Total Organic Carbon	415.1	Quarterly	2 (a)
Total Phenols	420.2	Quarterly	3 (a)
Total Dissolved Solids	160.1	Quarterly	2 (a)
Total Suspended Solids	160.2	Quarterly	2 (a)
Volatile Organic Compounds (Appendix I)	8240 w/ capillary column	Semi-annual	3 (a)
Volatile Organic Compounds (Appendix I&II)	8240/w capillary column	Once in 5 yrs	3 (a)
171 Appendix II Semi-volatile Organics Compounds	8270	Once in 5 yrs	3 (a)
Organophosphorus Pesticides & PCB's	8140 w/ capillary column	Once in 5 yrs	3 (a)

Chlorinated Herbicides	8150 w/ capillary column	Once in 5 yr	3 (a)
Antimony	7041	Quarterly	3 (a)
Arsenic	7061	quarterly	3 (a)
Barium	6010	quarterly	3 (a)
Beryllium	6010	Quarterly	3 (a)
Cobalt	6010	Quarterly	3 (a)
Cadmium	7131	Quarterly	3 (a)
Total Chromium	6010	Quarterly	3 (a)
Copper	6010	Quarterly	3 (a)
Lead	7421	Quarterly	3 (a)
Nickel	6010	Quarterly	3 (a)
Selenium	7740	Semi- annual (d)	3 (a)
Silver	6010	Quarterly	3 (a)
Tin	6010	Quarterly	3 (a)
Vanadium	6010	Quarterly	3 (a)
Zinc	6010	Quarterly	3 (a)
Mercury	7470	Quarterly	3 (a)
Thallium	7841	Quarterly	3 (a)
Cyanide	9010	Quarterly	3 (a)
Sulfide	9030	Quarterly	3 (a)
Iron	6010	Quarterly	3 (a)
Fish bioassay (96 hour acute toxicity % of survival)	NA (4)	Prior to Discharge	4 (c)

1. Not Applicable
2. Methods for Chemical Analysis of Water and Wastes,
EPA600/4/79/029, revised March 1983
3. EPA SW-846
4. Methods for measuring the Acute Toxicity of Effluent to Fresh
Water and Marine Organisms: EPA 600/4-85/013, April 1985, 3rd

Edition.

Frequency and Sample Type:

- (a) Quarterly from groundwater wells MW-1A, MW-7A, MW-8A, MW-12A, MW-13A, MW-14A, MW-15A, MW-16A, AND GO4 only.
- (b) Annually third quarter from groundwater wells MW-1C, MW-2C, MW-3C, MW-3A, MW-4A, MW-4C, MW-5A, MW-5C, MW-6A, MW-6C, MW-9A, MW-10A, AND MW-11A.
- (c) surface water samples only
- (d) constituents of concern